Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

SOCIETY OF ARTS.

FRIDAY, DECEMBER 24th, 1852.

Report of the Council to the Members of the Society of Arts, Manufactures, and Commerce, upon the relation which the Second Report of Her Majesty's Commissioners for the Exhibition of 1851 bears to the general objects of the Society.

The Second Report of the Commissioners may be considered to consist of three portions:

1. An enumeration of the various institutions in London having the advancement of Art and Science for their object, with some remarks upon their present wants and deficiencies, including both those supported by national taxation and private enterprise.
2. A statement of the advantages the Commissioners consider might accrue from bringing these Institutions to the same locality, thus providing a common centre of action for the dissemination of a knowledge of Science and Art among all classes, on a scale commensurate with the importance of our country and of this metropolis.
3. The announcement of the purchase of a tract of ground at Kensington Gore, for the development of this scheme, the execution of the details of which are left to the voluntary efforts of the public.

It has been a very general opinion among the Members of the Society of Arts, that from its exertions in promoting the Exhibition, and in even calling the Royal Commission into existence, it had a right to share in the pecuniary success of the undertaking, and that some portion of the surplus funds would have been placed at its disposal. There is no reason to suppose that the claims of the Society have been overlooked. Their share in the great work of 1851 has been unreservedly recognized on all occasions. The President of the Commission has continued to take a most active interest in the proceedings of the Society; and the same may be said of other Commissioners who are also Members of the Society. No such grant has, however, been made; and notwithstanding the show of justice which may at first sight seem attached to the expectations alluded to, the Council think that the Society may perhaps continue to secure to itself a larger amount of public support and sympathy, by continuing to be dependent upon its own unaided exertions.

Far from tendering any assistance to the Society, it would seem as if the Commissioners were rather disposed *to seek that of the Society*, as will be seen by a brief summary of those portions of the Report which bear upon the Society of Arts, and which it is now the wish of the Council to bring under the notice of the members:

1. The union of Literary and Scientific Institutions and Mechanics' Institutes with the Society is mentioned as the practical fulfilment of a wish for improvement among the various institutions of the country; and this union it appears to be the wish of the Commissioners to foster and extend:

> "While the Mechanics' Institutes referred to have not only endeavoured of late years to extend their importance as institutions for systematic instruction, but have manifested a strong desire to enter into connection with a central Institution in London, as evinced at an important and influential meeting held at the Society of Arts, on the 18th of May last, which has resulted in the union of more than 220 institutions, numbering upwards of 90,000 members, all in correspondence with that Society."—Page 12.

A complete List of these Institutions is given in the Appendix (D) to their Report.

2. Most of the arguments in favour of the educational projects of the Commissioners are deduced from the Lectures delivered before this Society, extracts of which occupy pages 15, 16, and 17, of the Report.

3. The want of accommodation for this and other scientific Societies is alluded to at page 22 of the Report; but as the idea of providing such accommodation at Kensington Gore is thrown out in the light of a mere suggestion, and does not seem to require immediate attention, it is obviously inexpedient to discuss it at present, especially as it is not presented in a categorical form. The Council would, however, remind the Society, that as the lease of their premises expires in nine years, it may become desirable, at a future, and not very distant time, to consider how far the interests of the Society would be affected by the proposal.

4. The portion of the Report, however, which it behoves the Society most carefully to consider at the present time, is that relating to the intention of the Commissioners to promote the formation of a Trade Museum, in which samples of every kind of produce which becomes an article of commerce, either as an export or import, should be deposited for the benefit of the commercial and general public. The Commissioners devote pages 30 and 31 of their Report to a sketch of the principles upon which such an institution could be founded, looking to the "active co-operation" of the Society of Arts, as the means by which the project, which first originated in the Society, could now be realized. The following extracts are given, as bearing more especially upon the Society:

> "The Society of Arts, by its recent special exhibitions, which prepared the way for, and led directly to, the Great Exhibition of 1851, has been again moving in this direction; and Professor Solly, in the same Lecture, suggests the formation of a Trade Museum, in which the manufactures should be fully represented, as well as the materials which give origin to them.
>
> "The Trade Museum, so liberally presented by various exhibitors to the Commissioners, and the numerous promises of further contributions, added to the collection already possessed by the Society of Arts, and what we have reason to hope might be secured from its active co-operation, would form a nucleus of a very important character for a Museum of Manufactures worthy of this industrial country. Museums similar to that proposed exist in other countries, and are of much use, by enabling manufacturers to compare the respective excellences of production." Pages 30 and 31.

That such a Museum forms a most essential part of the plans of the Commissioners is shown from the suggestions which the Commissioners already offer as to the distribution of the ground they have purchased. At page 39, they suggest that the National Gallery might occupy the north boundary of the property, while the *Museum of Manufactures* occupied a corresponding situation on the south,—the two sides being devoted to the Departments of Practical Art and Practical Science; and this quite independently of the projected juxtaposition of the Societies to whom it is proposed to allot the centre of the quadrangle thus described. It is, therefore, evident, that it is competent for the Society to consider the question of the formation and management of the Museum alluded to, quite independently of the question of removing the offices or general business of the Society to the new site.

Successive Councils of the Society of Arts have felt the great want of a suitable building for holding occasional exhibitions of various special branches of industry; and there can be no doubt that if it should be shown to be feasible for the Society to undertake the duty proposed to them by the Commissioners, it would be quite possible, at the same time, to secure the space necessary for the special exhibitions alluded to, which would, indeed, completely harmonize with the general views of the Commissioners.

The Council would be glad, therefore, to receive from any gentleman, whether he be a Member of the Society or not, any suggestions upon the want, uses, and best organization of such a museum. The Council will, in the meantime, give the subject their most earnest attention; and should it appear to them that an institution of this description would really be as beneficial to the country as has been represented, they will consider it their duty to the Society and the Public, to enter into communication with the Commissioners as to the best means of carrying the project into effect.

In conclusion, the Council would call especial attention to one of the most important statements of the Commissioners, embodying a principle which, indeed, runs throughout the whole Report:

> "We propose to trust, for the carrying out of our plan, to the same principles which alone have rendered the execution of so large an undertaking as the Exhibition of 1851 possible, within so limited a time,—viz., the finding room and system, and leaving it to the voluntary efforts of individuals, corporations, and authorities, to carry out the promotion of the different interests with which they are themselves connected, on which they are dependent, and of which they are, therefore, the best guardians and judges."—Page 40.

The Council cannot but think that it is of happy augury for the projects of the Commissioners, that they thus freely and frankly commit their fulfilment to that very Public for whose benefit those projects have been devised; and by keeping this in view, whatever development the proposed institutions may take, they will be the growth of our own free English soil, and will deserve the same amount of support obtained from all parties and shades of opinion by the EXHIBITION of 1851.

By order of the Council,
EDWARD SOLLY,
Secretary.

FIFTH ORDINARY MEETING,

Wednesday, December 22nd, 1852.

THE Fifth Ordinary Meeting of the Society was held on Wednesday, the 22nd instant; the Right Honourable Lord MONTEAGLE, Vice-President, in the Chair.

The Secretary announced that the Right Honourable the Secretary of State for the Colonies, had consented to forward the "Journal of the Society of Arts," free of expense, to the Colonies.

A Paper was read by Mr. Roger Fenton, "On the Present Position and Future Prospects of the Art of Photography," of which the following is an abstract.

It is thought advisable that at the opening of this the first public exhibition of photographic pictures, a short statement should be made of the present position and prospects of the art itself. The materials necessary to establish the dates, nature, and authors of the different discoveries by which it has been brought to its present position, have not yet been sufficiently examined and collated, for any history of photography to be given, which will not, from some quarter or other, provoke a protest. There is, however, one fact which no one disputes, viz., that the first practical combination of principles, for the most part previously known, and the first workable application of them to the production of sun-pictures upon paper, was made by Mr. Fox

Talbot. The step thus made was so great an advance, that its author is justly entitled to rank as inventor of photography upon paper.

It is said that, by a considerable part of the artistic body, it was received with distrust and apprehension. That the camera was looked upon as a kind of power-loom, which was to do away with hand-labour, or at least as a first step towards the making of pictures by machinery alone. It would be a most narrow view which could convert so faithful a servant as photography is to the artist, into a dangerous rival. If such a prejudice ever existed, it is, at present, a matter of tradition, and artists are now, as they ought to be, the most enthusiastic admirers, and, where they can afford the time, the most devoted practitioners of the art. They know that the camera will present them with the most faithful transcript of nature, with detail and breadth in equal perfection, while it will leave to them the exercise of judgment, the play of fancy, and the power of invention.

The progress made in the improvement of photography has been slow. In France, the efforts of those who studied the subject were directed exclusively towards the perfection of the daguerreotype. Partly from national rivalry, partly from the imperfection of the first pictures on paper, Mr. Talbot's discovery was slightingly spoken of. Latterly it has been studied with great perseverance and success. In England, its general use, and the progress of improvement, have been impeded by the existence of a patent, which happily now is almost entirely abandoned. During the last year and a half the art appears, in both countries, to have made rapid progress, and in both is due to the same cause—the impulse given by the Great Exhibition. This progress seems to consist principally in the augmented number of its students, and in their increased practical dexterity. New deoxidising agents have been brought into general use, and the surface of the paper has been rendered smoother and more glossy, so that it will take a sharper negative impression. Means have also been adopted for keeping it in a sensitive state for a longer time, uninjured. A new medium, collodion, variously modified, has been adopted, on which to receive the sun-pictures; a medium which possesses three most valuable properties,—great rapidity of impression, excellence in the picture produced, and the capability of receiving either a negative or positive picture, according to the intention of the operator; balanced by two disadvantages,—the necessity of employing so heavy and fragile a material as glass to receive the collodion film, and of performing consecutively all the different parts of the process.

A gradual but slow improvement has been made in the construction of lenses, principally consisting in the use of a kind of glass, that, in the passage of light through it, absorbs less of the chemical ray. In spite of many attempts to improve the camera, it is still the same clumsy, unmanageable affair that it has always been.

The improvements that have been made are, with one exception, that of collodion, rather those of detail than of first principle, and have been obtained more by rough experiment and by accidental discoveries, than by scientific research.

In the present Exhibition there are specimens of French, German, and English skill. The difference that prevails in the choice of subjects is most striking. The French pictures are of cities, fortresses, churches, palaces,—the living triumphs or the decaying monuments of man's genius and pride. The English are, for the most part, representations of the peaceful village; the unassuming church, among its tombstones and trees; the gnarled oak, standing alone in the forest; intricate mazes of tangled wood, reflected in some dark pool; shocks of corn, drooping with their weight of grain; the quiet stream, with its water-lilies and rustic bridge; the wild upland pass, with its foreground of crumbling rock and purple heather; or the still lake, so still that you must drop a stone into its surface before you can tell which is the real village on its margin, and which the reflection.

There is also a difference in the methods generally employed in the two countries. The best pictures received from France have been taken by means of albumen upon glass; and certainly nothing can surpass the brilliancy and harmony of their tone and the minuteness of detail. The best productions of English draftsmen, without reference to portraits, have been taken upon paper; and upon this medium there has been nothing, it is believed, produced which can surpass in delicate beauty or in grandeur some of the specimens exhibited. This conclusion is the more satisfactory, because it is admitted that the perfection of the paper process is the true point to which our efforts should be directed. We owe to the French the use of albumen upon glass, and the most perfect pictures that have been obtained by that process. It is to them, too, that we owe the improvement, if such it be,—a yet disputed question,—of the wax-paper process. According to the testimony of Mr. Stewart, in his letter in the *Athenæum*, it is to a member of the French Academy that we are indebted for what promises to be an important improvement,—the use of an air-pump to iodise and excite negative paper in vacuo. On the other hand, it is in England that a perfect negative picture, with the single lens, has been produced, in the shortest time; and here also what promises to be the *ne plus ultra* of photographic excellence, the collodion negative upon glass, has been discovered.

The United States possess a greater number of professional photographers than any other people; and it seems generally conceded that the finest daguerreotype pictures sent to the Great Exhibition were produced by them. If the photographs sent by German exhibitors were of inferior character, the specimens recently sent over show that the lessons learnt in 1851 have not been thrown away upon them. In Russia many amateurs are devoting their whole time to the art, and producing not unsuccessful results in the midst of difficulties enough to discourage the most enthusiastic student.

Though the excellence of the specimens now collected might allow photographers the indulgence of a little self-complacency, still everybody feels that as an art, it is yet in its infancy, and that the uses to which it may be applied will yet be multiplied tenfold. What practical use has yet been made of it in the artist's studio? Those natural attitudes of the human form which come unbidden, and which cannot be assumed, is there any pencil so rapid that it can depict them before meaning has departed from the pose? Is there any eye so true, any memory so faithful, that can mark and retain those delicate shades of difference which succeed one another in the human form, when it sinks back from intelligent movement into torpid inertness?

Foremost among the qualities whose rare union produces great success in art is the power of ready and accurate observation. The highest efforts of the time-honoured and consecrated princes of art are, so far as the expression of the different figures contained in them is concerned, and in all but their arrangement and composition, not creations, but remembrances. Those world-renowned pictures and statues, which have made their authors immortal, and have given pleasure to successive generations of admirers, is it certain that they gave the same pleasure to those who executed them? Doubtless they must have felt, however beautiful the result of their labours might be, it was infinitely below the image floating before their mental sight. And why? Is it not because of the difficulty of expressing the ideal by the material? Yet everything that is ideal, and that constitutes expression in the human form, is translated to us materially. Every disposition of mind has its bodily expression. As one mental phase succeeds another, so do their material formulas; if the first is rapid, so is the second fleeting and hard to define. Why should the artist then hesitate to make use of the best material means which he can find?

The apparent hesitation in making use of the art arises, in great part, from the present imperfect development of photographic knowledge. To be certain of producing a good picture requires, at present, an expense of time and thought, which those who wish to excel as artists can hardly spare. The chemistry of photography is as yet but partially understood; a few of the leading principles only are known. On this division of the subject much may be said that would be interesting and useful, but it would be out of the limits of the present paper. It is only within the last few months that photography has been extensively applied to the production of stereoscopic pictures; and even now, perhaps, not one in five of those who amuse themselves with the camera have ever tried to take one.

The present scientific and industrial applications of this art are, as yet, little more than indications of what will hereafter be done. We hear of the collodion plan being transferred from the glass to the wood engravers' block; of attempts being made by means of sensitive paper to record the pathways of the heavenly bodies, or to delineate in legible and lasting characters the minute wonders of microscopic creation. Among the pictures exhibited, there is a remarkable specimen of successful effort in this direction. It is also being used at this moment for the advancement of geographic research; photographic apparatus having been supplied to the vessels despatched to the Arctic Seas under Sir Edward Belcher, and to the "Herald," sent out under the command of Captain Denham, to examine the unexplored islands of the Pacific.

Its commercial and industrial use has hitherto been very limited; and before much progress can be made in this direction, more attention must be paid to a part of the process at present treated as one of secondary importance,—namely, the positive picture. According to the method generally employed, and which seems at present to give the best results, negative pictures can be copied with sufficient rapidity only on days of strong sunshine; and in order to produce rich tone and agreeable colour, each proof requires careful watching during the after process of fixing. To say nothing of the risk of injury to which the negative picture is exposed by careless manipulation, it is impossible at present to trust the re-production of the positive proof to less skilful hands than those employed in the creative branches of the art. Before sun-pictures can be extensively used in the production of letter-press, some method of copying them must be discovered, which shall produce as good or better results than the present one,—which shall be so simple in its manipulation that a workman of ordinary intelligence may be trusted to perform it,—and which shall not depend upon the state of the weather for its success. Of these conditions, the last is already fulfilled by the use of the negative Talbotype process in printing.

Before closing this brief survey, it will not be out of place to glance at the data which are necessary for the more rapid development of photographic knowledge. Is it yet ascertained what is the agent which produces the change in the salts of silver from which the sun-picture results? Is it light alone, or some agent accompanying, yet distinct, from the rays of light? If it be light alone, what are the causes which render its action so unequal at different seasons of the year, and at different times of the day? What is the effect of the extreme heat and cold in hastening or retaining photographic action? What influence is exercised by the electrical state of the atmosphere? Here are a few out of many problems requiring the closest observation, and long series of delicate experiments for their solution.

The chemical changes which take place in the several stages of a photographic picture require to be subjected to a more searching analysis. The refractive qualities of different transparent media, more or less adapted for the construction of lenses; the possibility of employing lenses that shall transmit only the chemical ray of the spectrum, the least advantage of which would be to save the cost of the present double achromatic combination; the possibility of constructing lenses of variable focus, by making the rays of light pass through fluids of different density, as suggested by Mr. Wheatstone; all these are subjects which demand and must receive investigation.

To the commercial principle just now beginning to be applied to this art, may be safely left the development and the reward of practical skill. But these more abstract questions will not be likely to receive the attention due to them, until photographers are united together in a society which shall give a systematic direction to their labours, and which shall keep a permanent record of the progressive steps from time to time, and of the authors of them. Such a society will be the reservoir to which will flow, and from which will be beneficially distributed, all the springs of knowledge at present wasting unproductively. Such a society is within one step of complete organization, and awaits only the general co-operation of the whole body of Photographers to enter upon an active and useful existence.

It was moved, seconded, and carried unanimously, that the best thanks of the meeting were due, and should be given to Mr. Fenton, for the interesting paper he had read.

The Chairman announced that the Exhibition of Recent Specimens of Photography, which they had met to inaugurate, would remain open for one week from this date, between ten o'clock and dusk.

Mr. Robert Stephenson, M.P., proposed, and the Rev. Dr. Booth seconded, a vote of thanks to the Chairman for his great kindness in presiding on the occasion; which was carried by acclamation.

EXHIBITION OF RECENT SPECIMENS OF PHOTOGRAPHY.

It is proposed to return to this subject next week, then to describe more in detail the specimens exhibited, and the means and processes by which they have severally been obtained. We must not, however, omit to mention in this place, that the Society is indebted to the Messrs. Elkington for the very fine and unique collection of Gold and Silver Plate, exhibited at the opening *soirée*. In their productions there is always to be found a happy union of the most refined taste and the best workmanship.

EXHIBITION OF INVENTIONS.

It is scarcely to be expected, that in an Exhibition of this character there should be found many specimens of Manufactures, which belong more properly to another and totally distinct series.

Perhaps the most important article of manufacture exhibited, and the one capable of most universal application, is a new artificial stone, or terra cotta, by Mr. J. M. Blashfield, which is burnt in the kiln without the usual "saggar," and is said not only to resist the action of the atmosphere, but also to become harder by exposure. It takes the sharpest outline and the boldest relief from the mould; the face being even in texture, and agreeable in colour. It will be remembered that there are serious objections to the ordinary artificial stones, in so far as their surface exfoliates, and changes colour after a time, in consequence of the chemical action due to the salts and alkalies used in their composition. The utility of a material of this kind for mouldings and for ornamental works, especially for gardens, cannot be denied; and supposing it to be produced at a cheap rate, there would unquestionably be a very large demand. Mr. Austin exhibits specimens of bricks for British bond, and for the formation of hollow walls, so as to admit of the escape of damp in thick walls, and to afford a ready means of effecting ventilation from all parts of a building. They are novel in form, and being dowel, or wedge-shaped on the base, will be found to make very strong work. This is a manufacture calling for great improvement; and now that the restrictive duty has been removed, and bricks may be made of any size, there is good reason for thinking that such will speedily take place. Several ornamental panels, painted by a new process, are sent by Mr. Froggott, being a new adaptation of colour to decorative purposes. Messrs. Hartly contributes several large sheets of rolled glass, which present a semi-opaque appearance, and can therefore be advantageously used for church-windows. Ribbed glass of this kind has also been employed for the windows of Gothic structures, in lieu of the small panes united by metal framework. There is this peculiarity about the ribbed glass, that the ribs, instead of obstructing the light, as it was thought they would, by collecting the rays absolutely increase it. Messrs. Cogan's dairy and horticultural glass, to which we referred last week, is also shown, with a very ingenious syphon for drawing off the milk from the cream, in place of the clumsy process of skimming. This syphon consists of a simple semi-circular tube, through which a piston works. One end of the syphon being placed in the vessel containing the new milk, and the piston being withdrawn, a vacuum is created, so that the milk flows through the pipe into a second vessel, leaving the cream behind.

Mr. C. A. Preller exhibits a series of seventeen specimens of leather tanned by a new process. The material employed for the tanning is of a peculiarly oily character, giving softness to the leather, while the original web-like fibrous texture is preserved. As no immersion in any liquid, for the purpose of being acted upon by tannic or other acid, is required, the leather will be found of greater density and durability than hitherto. Heat and damp do not make it hard and fleshy, and when exposed for several hours to the action of boiling water, it does not lose any of its pliability. In connection with this article, several specimens of improved saddlery, and of harness fastenings, the latter by Lott, Jewell, and Co., are shown. In the fastening, a slide-clasp is substituted for the ordinary buckle, by which the necessity for piercing holes, and thereby weakening the strap, is got rid of. Gutta percha goloshes, intended to hold chemicals in contact with the wounded parts of the feet of cattle, are shown by J. Jones and Co.

In miscellaneous manufactures and small-wares, Mr. Stephens exhibits an ever-pointed pencil, of novel and simple make. The case contains a spiral screw, which is acted upon by the cap when turned, and so drives forward the lead. The elastic surgical bandages for invalids, by Mr. Sparks, are intended to supersede the ordinary lace-stockings used by persons with weak limbs. In the basket-work shown by Mr. Emery, the novelty consists in the wicker sides being attached to a wooden bottom, giving increased durability. Mr. Simons exhibits many modifications of Palmer's candle-lamps, and their application to carriages and a variety of other purposes. The chief improvement consists in the application of a bayonet joint for holding the spring in its place, so that a candle may be easily inserted, without fear of its being broken; and a ready means afforded of learning the exact length remaining at any moment.

It is to be hoped that the efforts which have been made to lay before the Members and the public a faithful record of the inventive genius of the age may be attended with fruitful and favourable results; and that on the recurrence of each Yearly Exhibition, an epoch may be traced, as well in the history of the improvements of all articles of utility, and the means by which human labour may be economized, as in that of the Society itself.

SUBJECTS FOR PREMIUMS.

We are reluctantly compelled to delay the publication of the third section of the Premium List until next week, owing to the pressing and important matter requiring immediate attention.

COLONIAL CORRESPONDENCE.

PLANTAIN FIBRE.

Several very interesting communications have recently been received from the West Indian Colonies, on the subject of Plantain fibre, its production, and its use as a substitute for flax. The subject is one of considerable importance, not only to holders of West Indian property, but also to manufacturers at home. It also possesses this further interest to mechanical men, that it is a matter especially in need of their practical advice and assistance, as the whole value of the fibre, as an article of trade hereafter, will depend on the mode in which it is prepared, and the economy and perfection of the machinery used in its extraction.

It has long been known that the stem of the West Indian plantain, or banana, contains a large quantity of a strong and serviceable fibre, suitable for many of the purposes to which flax and hemp are applied. Indeed, more than ninety years since, specimens of fustians and other fabrics, manufactured from this fibre, were presented to the Society, and are now in its collection: and in 1762, a premium was specially offered for the encouragement of this branch of colonial manufacture; but after a couple of years, no candidate appearing to claim the reward, it was discontinued. From that time to the present, various detached accounts are to be found respecting the fibre of the West Indian plantain; but its manufacture does not appear at any time to have been taken up on a large scale. A few years since, some excellent cloth, and also some remarkably good paper, were made at Paris from the fibre obtained from plantains which had grown there in the Jardin des Plantes: specimens of these were sent out to the West Indies. Good samples of plantain fibre were contributed to the Great Exhibition of 1851, by Messrs. Netscher and Davison, from British Guiana, accompanied by the statement that thousands of tons of the fibre, at present left to rot upon the ground where the stems are cut down, might be annually saved and exported, if a remunerative price could be obtained for it here. There appears to be no doubt that a fair remunerative price can be obtained for it, giving a profit both to the grower and the consumer.

The Hon. Mr. A. D. van der Gon Netscher, resident proprietor of the Klein Poudroyen plantation in Demerary, states, as the results of many years' experience on more than 400 acres of plantain plantation, that in every acre, on an average, at least 700 stems are cut down every year, the suckers being planted at regular distances of twelve feet by nine feet, which is the distance found most advantageous when the plant is cultivated for the sake of its fruit. If planted at distances of eight feet each way, and for the fibre alone, at least 1,400 stems per acre might be cut every year. In Mr. Netscher's plantation, the average weight of each plant was eighty pounds, and the yield of fibre from each was four pounds; but then, only about two and a half pounds were clean and good, the remainder being dirty and broken fibre, only suitable for the manufacture of paper. From these statements, it appears that nearly 60,000 lbs. of plantain stem is lost per acre every year in the plantain-fields; and, further, that this quantity of stem contains at least 3,000 lbs. of fibre. If the plant were cultivated solely for the sake of the fibre, nearly double the above amount would be obtained.

The specimens of plantain fibre shown in the Great Exhibition were of excellent quality, and probably worth from 40*l.* to 43*l.* per ton. As far as the fibre itself was concerned, it did not appear to be in any way inferior to the best Manilla hemp; and there is little doubt that, when well prepared, it would command a good price in the market, and find a ready sale. A good deal has been said and written about the importation of the Manilla plantain into the West Indies, though whether much good would be effected by doing so is very questionable. The fibre of the common banana, which flourishes there most abundantly, is an excellent article; and the object to be attained is not the introduction of any other plant, but rather the invention of a cheap and convenient mode of preparing the fibre from the one which is already abundant in several of the West Indian Colonies. Various ingenious mechanical arrangements have already been proposed for the preparation of plantain fibre, but for the most part they do not seem quite suited to the object in view. From the data already mentioned, and the very small per centage of fibre which the stem is said to contain, it is plain that a very large quantity of useless vegetable matter has to be removed. Now, in most of the machines hitherto devised, as the object has, of course, been to operate on the stems thoroughly and rapidly, the arrangement employed has been of such a kind as to crush them so completely as, in a great degree, to injure the fibre, and hence considerably deteriorate its value.

HOME CORRESPONDENCE.

MR. HUME, M.P., ON SUGAR DEFECATING AND COFFEE-GRINDING.

SIR,—I have received the list of *Subjects for Premiums* for the Session 1852—3, and regret that I am not in time to submit to the Society the importance of offering a premium for the best means of clearing cane juice from its impurities.

By the use of quicklime the deposit of the impurities from the cane juice has been generally made in our West Indian Colonies, but attended with a great loss of the saccharine matter; and as, of late, the use of a preparation of *lead* has been proposed to be applied for the purpose of *defecating*, or *depositing* the impurities from the cane juice, with a saving of twenty or thirty per cent of saccharine matter by that process, it seems of the greatest importance to ascertain if the lead can, by any subsequent process, be entirely removed from the cane juice; and then the discovery may be the means of saving the sugar colonies of this country from ruin.

The premium No. 59, in the Society's list, for "an account of recent improvements in the machinery and *processes* employed in the manufacture and preparation of sugar from sugar-cane," may comprehend what I mean; but the premium being entered under the head of machinery, it would, I submit, be necessary to add, "and any chemical process, or the use of any article by mixture with the cane juice, that would cause the *defecation*, or *purification* of the cane juice so as to produce the greatest proportion of the saccharine matter from the cane juice, pure and free from any deleterious article."

If the impression of the premiums is not yet thrown off, this explanation I propose might be added as a note to No. 59.

There is another premium which the late proceedings of Government render necessary, and which the Council might also add to the present list: viz., "For the simplest and most economic mill for grinding coffee."

The interference, by the Excise, with the sale of coffee, and of chicory, in upwards of 130,000 retail shops, under the plea that adulteration of coffee by chicory takes place, makes it of great importance to every consumer to have a simple and very economic *mill*, for the purpose of grinding the coffee berry; and, as the chicory can only be sold in separate packets, of mixing afterwards any proportion of chicory that may be approved of by each consumer.

I hope the Society will, though late, take means to assist our sugar-growers, and also to call out the inventive genius of our artizans, to obtain a simple and cheap coffee mill.

I remain, your obedient Servant,
JOSEPH HUME.

MAIDENHEAD EXHIBITION.

Dec. 10th, 1852.

SIR,—The Secretary to our Mechanics' Institute has, I believe, forwarded you a copy of the "Reading Mercury," containing an account of the opening of the Maidenhead Exhibition of Works of Art, Industry, and Curiosity. The Exhibition is now closed, after remaining open for six days, or four more than were originally contemplated,—the extension having been made in consequence of the interest taken in it by the public.

A slight account of its origin and progress may, perhaps, be useful for the sake of those who may hereafter wish to engage in similar enterprises elsewhere.

That our little Exhibition was all that could be desired, is too much to say; but that it was more than could have been anticipated from the shortness of time allotted to its completion, its promoters feel pride in believing. A local Exhibition, properly speaking, should be made the means of calling forth local talent, of bringing into a focus and displaying the products, natural and artificial, of the surrounding districts. But to do this requires time; and this we did not allow ourselves, for the simple reason, that we did not at first contemplate an Exhibition of so ambitious a character, but merely proposed to collect a few objects of interest, to amuse the members of our Society at the Annual General Meeting. Circulars, however, inviting contributions, having been issued, and proffers and promises of assistance coming in, the original humble idea gradually expanded into the very gratifying exhibition which eventually took place; for gratifying it was in many respects, and in none more so than as showing how much could be effected in a right direction in a short period of time, and in a small provincial town, by the energy and perseverance of a few enterprising individuals. Not two months elapsed between the conception and completion of the undertaking: and, when it is considered that, through fear of not being able to collect a sufficient number of articles to fill the room (the Town-hall), the privilege of rejection was not exercised, it is surprising that so handsome a display should have been made; the effect of the inferior objects exhibited having been neutralized by the great number of the superior ones; such as pictures lent by the neighbouring gentry, china, and alabaster vases, statuettes, specimens of natural history, geology, and mineralogy. The few productions of local talent—necessarily few from the circumstance of the shortness of the time allowed for preparation—were highly creditable to the producers, and from the eagerness and curiosity with which everything was examined by hundreds of the humbler members of society, including the children of the National, British, and other Schools (not excepting that of the Union Workhouse), there is every reason to believe that much good will have resulted in quickened perception, increased information, and improved taste. May other provincial towns, benefiting by our experience and example, follow the one and improve upon the other, while we take an honest pride to ourselves as having been the first who have got up a successful Exhibition in so small a town as Maidenhead.

Your obedient Servant, LEON.

CONCERTS.

SIR,—Last week I was called upon to pay the sum of 4*l.* 14*s.* 6*d.*, as the expense of obtaining a license for our Institution so as to enable concerts and musical entertainments to be held in its hall and concert-room. This sum we have every year to contribute, and it is a tax which we think the Legislature never intended we should have to pay. I am anxious to hear, through your columns, whether we *legally* come under the operation of the 55th of George II., which was meant, evidently, to apply to public-houses; and if we do, whether some steps could not be taken by the Society of Arts to relieve us from this impost. Four guineas and a half spent in the purchase of books every year, would, in time, add considerably to our literary treasures. For some years we refrained from taking out the license, but being threatened with an information, we took legal advice upon the matter, and were strongly advised not to run the risk; the question was a very doubtful one, and might very likely be given against us, in which case we had no further remedy. P. P.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

ROYAL SCOTTISH SOCIETY OF ARTS. — The Society met in their Hall, 51, George-street, on Monday, the 13th instant, when, at the request of the Council, William Swan, Esq., F.R.S.E., gave an exposition of Eclipses, with an account of the remarkable phenomena observed at the total solar eclipses of 1842 and 1851.

Mr. Swan commenced by giving a popular explanation of the moon's motion, pointing out the conditions necessary for an eclipse to happen, and the circumstances which determine whether it is central or partial; or, in the case of a solar eclipse, whether it is total, partial, or annular. The curious adjustment of the periods of a *lunation*, of the revolution of the moon's *nodes*, and of the line of the *apsides*, was next described; owing to which, it was shown that after a period of about eighteen years and ten days, all eclipses recur in the same order, and nearly of the same magnitude. The remarkable fact that four total eclipses of the sun happen in the month of July in four periods of nine years —namely, the eclipses of 1833, July 17; 1842, July 8: 1851, July 28; and 1860, July 18; was thus explained. In describing a lunar eclipse, it was next shown how the atmosphere, by refracting the sun's rays, threw a portion of light into the earth's shadow; occasioning the bright copper-coloured light often reflected by the moon, even when totally eclipsed. Passing to the subject of solar eclipses, Mr. Swan gave an historical sketch of the more remarkable eclipses recorded as having happened in ancient times. Mr. Swan then referred to his memoirs on the eclipse of 1851, in "The Transactions of the Royal Society of Edinburgh;" and, for an extremely able and interesting account of the eclipse of 1842, he recommended the perusal of M. Arago's memoir in the *Annuaire* for 1846. He also urged upon all who could, to avail themselves of the opportunity of seeing a total eclipse of the sun, which would be afforded by the eclipse of 1860. That eclipse, it was stated, would be visible in the south of Spain; and if a station in the path of the moon's shadow could be at all easily obtained, Mr. Swan, from his own experience, could say that the eclipse, regarded merely as a grand spectacle, would amply repay the labour of the journey to see it.

INSTITUTION OF CIVIL ENGINEERS, Dec. 14th.—J. M. Rendel, Esq., President, in the chair. The discussion on Mr. Rawlinson's Paper "On the Drainage of Towns," was again resumed, and occupied the whole of the evening. It was admitted, by unquestionable practical authorities, that mere abstract principles did not hold good, in questions of the sewerage of towns, where so many local circumstances and domestic occurrences interfered with the perfect working of even the best designed general plan. There was no doubt that if pipe drains could be made sufficiently large and strong, and manageable, within a certain cost, they would be as good as brick sewers; but under the present circumstances, they were only fit to form the connections of houses, courts, and other small localities, with the main sewers, which should be constructed of brick, of such dimensions as to admit of easy internal inspection and repair, and be of such form, except where the flow of water was at all times considerable, that the radius of the curved bottom should be such as to gather a small supply of water into a sectional area, affording the same hydraulic mean depth as in a pipe drain, of a diameter merely adapted to discharge the minimum flow. The removal of obstacles, or accumulations, from the main sewers, by manual labour, was shown not to be more dangerous than the ordinary employment of most working engineers, or of men engaged in the execution of constructive works, and that it was a mere exhibition of false sentiment to put forward such an argument in favour of the introduction of pipe drainage.

Dec. 21st.—J. M. Rendel, Esq., President, in the chair. This was the Annual General Meeting for the election of the President, Vice-presidents, and other members of Council, for the ensuing year, and for receiving the Annual Report of the retiring Council. The Medals and Premiums which had been awarded were presented. The condition and progress of the Institution were described as most satisfactory, the expenses diminishing, so as to enable more volumes to be published, and the number of members, which now amounted to 746 of all classes, fast increasing. The following members were declared to form the Council for the ensuing year:—James M. Rendel, *President*; I. K. Brunel, J. Locke, M.P., J. Simpson, and R. Stephenson, M.P., *Vice-Presidents*; G. P. Bidder, J. Cubitt, J. E. Errington, J. Fowler, C. H. Gregory, J. Hawkshaw, J. R. M'Clean, C. May, J. Penn, and J. S. Russell, *Members*; and T. Brassey and T. R. Crampton, *Associates*.

PROCEEDINGS OF INSTITUTIONS.

Ashford.—On Thursday and Friday, the 16th and 17th inst., Mr. Henry Nicholls gave two of his Shaksperean Readings to the Members of the Mechanics' Institute. The first evening was devoted to a selection from "Macbeth." The passages selected were given generally with great power, and evinced at once careful study and delicate appreciation of the great poet's meaning. The banquet scene, and that of *Lady Macbeth* walking in her sleep, elicited special marks of approbation. The next evening's entertainment consisted of the "First Part of Henry IV." Mr. Nicholls was very successful in the delineation of *Hotspur's* impetuous fiery temper, and the manner in which he coped with the great difficulties which must always attend the attempt to impersonate *Falstaff*, deserved great praise. *Prince Henry*, *Mrs. Quickly*, *Bardolph*, and *Poins*, were very well sustained, and the reading was throughout warmly applauded by a numerous audience.

Brighton.—A highly instructive Lecture on the "Wonders of Creation," was delivered to the Members of the Mechanics' Institution, by J. W. Clark, Esq., at the Town Hall, on Thursday, December 9th. The lecture was illustrated be several beautiful and appropriate Diagrams, and much information upon the important science of Geology was conveyed to an attentive assembly in a pleasing and succinct style.

Newbury.—On Tuesday, the 7th instant, Mr. Wheeler gave a Lecture to the Members of the Literary and Scientific Institution, on the "Telescope and its relation to Astronomy." The invention of the telescope appears to be due to two Dutchmen, Metius and Jansen, in the year 1590; and the application of the laws of light, and the principles of optics to the construction of instruments for viewing distant objects, was on this occasion divested of its technical abstruseness, and presented in a clear, intelligible and popular style. After giving a very lucid description of the number, sizes, and convexity of the lenses employed as eye-pieces, and other matters in reference to the subject of his lecture, Mr. Wheeler concluded with a notice of the popular fallacy (if such it may be termed), that the sun and moon appear larger when in the horizon (rising or setting) than they do when in the zenith, or intermediate altitudes, which he attributes to association, or the comparison of the orb with local objects, nearly in the same line of sight.

Portaferry.—On Friday evening last, Samuel Boyd, Esq., delivered the second of a Course of Lectures on "Animal Physiology," to the Members of the Mechanics' Institute; Joseph Wallace, Esq., President, in the chair. The subject of the lecture was the "Physiology of Respiration." After briefly reviewing his former lecture on "Circulation," the lecturer explained the mechanism of respiration in fishes, birds, reptiles, and mammalia. He then entered into an analysis of common air, and explained the changes it undergoes in the lungs, and concluded by pointing out the effects of breathing a vitiated atmosphere. This society is now in a very flourishing condition. The library is well stocked with books, and a daily reading-room is to be opened on the 1st of January, with a well-selected supply of newspapers and journals.

Southampton.—On Wednesday evening the Rev. A. McLaren, B.A., lectured to the members of the Polytechnic Institution, at the Victoria Rooms, on "The World's Teachers who have Profaned their Genius." The main purpose of the Lecture was to illustrate the principle that every blot in the moral nature reacted on the intellectual and artistic excellence of the teacher, welling up in foul streams of error in the reason and in the taste. The lives and characters of Byron, Burns, and Scott, were taken as illustrations of this truth; and it was shown how there was an exact parallel between what in their conduct and temper a plain man would pronounce wrong, and what in their books a critic, from a literary point of view, would pronounce defective. As a type of the converse of the same principle, the life of Milton came under consideration; it was regarded as a continuous protest against the notion that a poet is weak and slack-braced, and may be wicked. After some other illustrations, drawn from the lives of Coleridge and others, the Lecture was closed by an emphatic reiteration of the great truth of the sacredness of genius, and its necessary connection with goodness; and by considerations drawn from it of the dignity of literature and art, and of the spirit in which they should be pursued.

Stirling.—The opening Lecture of the Session in connexion with the "School of Arts" was delivered in the Court-house, on the evening of Friday, the 10th instant, by Charles F. Partington, Esq., London, "On the Crystal Palace as it was and as it is to be." The Lecturer illustrated, by means of diagrams and suitable experiments, many of the numerous inventions exhibited in the Great Exhibition.

Tonbridge.—The third Lecture of the present Session of the Literary Society was delivered on the 13th inst., by J. Gorham, Esq., M.R.C.S.L., "On the Application of Numbers in Physiology and Medicine." The application of mean numerical values in medical investigations was shown to be of the utmost importance, and it was stated that if the principles of calculation upon which the exact sciences were based were adopted in such investigations, that medicine itself would approximate to an exact science. This was illustrated by reference to the curve of viability, as deduced from the Northampton tables,—by curves of the pulse for all ages, from several authorities, as well as from three hundred original observations by the lecturer,—by anisothermal curves, or curves of unequal temperature, for the four seasons in different latitudes, in contradistinction to the isothermal lines of Humboldt,—the latter proving, by contrast, that the observation of Humboldt in reference to physical laws might eventually be found to apply to medical and physiological phenomena: "In all that is subject to motion and change in space, the ultimate aim, the very expression of physical laws, depend upon mean numerical values, which show us the constant amid change, and the stable amid apparent fluctuations of phenomena."

WAREHAM.—A Lecture was delivered in the Town Hall, on Wednesday evening, the 8th instant, by Mr. F. Chatterton, " On the Antiquity of the Harp." His remarks on the subject showed deep research, and were pointed and highly instructive. At intervals he performed several pieces of music, to illustrate the different portions of the history of the Harp, Miss Partridge assisting in the vocal parts. The audience was numerous, and appeared to be highly delighted with the entertainment.

WINDSOR AND ETON.—Mr. Wheeler delivered two highly interesting and attractive Lectures "On the Electric Telegraph, its Principles and Practical Use," on Wednesdays, December 1st and 8th. The Lectures were fully illustrated by well-executed diagrams, working models, and experiments; and technical terms being as much as possible avoided, the system of telegraphing by Electricity was made plain to the dullest comprehension. Mr. Wheeler commenced with a brief account of the early history and working of Telegraphs, and then proceeded to explain the nature both of frictional and voltaic Electricity. The deflection of the magnetic needle by Electrical currents, the various systems of working the Electric Telegraph, the different alphabets, the printing Telegraph, and all the other details, were then taken in order. Mr. Wheeler on both evenings contrived to rivet the attention of a crowded and miscellaneous audience for nearly two hours.

NOTICES TO CORRESPONDENTS.

Country Institutions.—Correspondents who are so good as to send reports of proceedings, are requested to forward them not later than Tuesday morning, or they will be too late for insertion in the following Friday's Journal.

Subscribers to Journal.—We cannot undertake to forward the Journal to unknown correspondents. In reply to a number of communications, we must state that it can be obtained through the usual trade channels.

Members.—Several Members of the Society have complained of not receiving the Journal. In every case, however, it has been found that they were duly delivered, and that the blame really rested with the Members' servants.

Petitions.—In answer to numerous inquiries as to the best time for presenting petitions to Parliament respecting the distribution of Parliamentary Reports, we have to state that any time during the next six weeks will do.

Anonymous letters cannot be attended to. All communications, whether the author's name is to appear or not, must be accompanied by the writer's name and address.

ANSWERS TO CORRESPONDENTS.

Steam-engines (1).—" In reply to your Correspondent I beg leave to say that water, acted upon by a piston, and passing backward and forward through an orifice—the resistance to its passage increasing as the velocity accelerated—has been used for a long time as *a regulator of speed* for steam and other engines. It is also used to check the acceleration of trains of wagons down inclined planes, by an apparatus attached to the chain-wheel, including a cylinder and piston. Water has also been used to adjust the supply of steam admitted into the engine, by means of a small pump forcing the water under a ram, or weighted piston, something like that of a hydraulic press, there being a small hole in the cylinder capable of adjustment for the escape of the water. Air has been used in the same way." —J. G.

Steam-engines (1).—" A hydraulic governor for a steam-engine has been made in the following manner:—A small pump is connected to the engine, and delivers water into a cylinder provided with a loaded piston, or plunger. The throttle-valve of the engine is connected to the piston, or plunger. A small cock is inserted in the bottom or side of the cylinder, through which the water is allowed to escape and return into the cistern from which the small pump is supplied. Tho cock is adjusted so as to allow the water to escape as fast as the pump supplies it, when the engine is running at its proper speed. If the speed of the engine increases, the water is supplied faster than it escapes, and the piston rises and closes the throttle-valve. If, on the contrary, the speed of the engine decreases, the piston descends and opens the throttle-valve. The speed of the engine is altered, when required, by altering the opening of the cock."—C. C.

Steam-engines (1).—" A pneumatic governor for regulating the speed of steam-engines was shown in the Great Exhibition by Mr. H. J. Tuck, which has since been applied to an engine that was formerly on the Croydon Atmospheric Railway, and is now at work at a ship-building yard at Poplar, for sawing timber. It is easy of application, and pumps air, and therefore the joints, &c., are few and simple; not so with an hydraulic pump, pipes, and press." —M.

Calf-leathers and Morocco:—" Tell your Correspondents (Nos. 13 and 14) to consult the works of Davy, Sequin, De la Lande, Macbride, Deyeux, and Dr. Ure's 'Dictionary of Arts and Manufactures;' they each and all contain valuable information on the subject: indeed, all the Institutes in connection with our Society ought to have those works. If for details of manipulation, consult some intelligent furrier, fellmonger, and currier."—F. L.

Gas (6).—" The gas employed in many towns, and, I believe, in Edinburgh amongst others, is made from *cannel* coal, which yields better gas and more gas than the Newcastle coal generally employed in London. The Western Gas-light Company have been using cannel coal at their works at Kensall-green, and some of the other Gas Companies have also tried it. One objection to its use is, that the consumer pays more attention to the price per 1,000 feet than to the quantity of *light* which the 1,000 feet produce; he naturally objects to pay a higher price on account of improved quality, when the quality may be afterwards lowered to the common standard. In some towns the gas-works are the property of the Corporation, and a good quality of gas is maintained by the entire or partial use of cannel coal. Various attempts have lately been made to obtain a larger quantity of gas from cannel, and other similar rich coals, by decomposing steam by means of coke, and combining it with the cannel coal gas. The most economical mode of obtaining the largest quantity of *light* from coal has not yet been determined, and it will moreover vary in different localities. It must not be forgotten that the *coke* is a very important item in the account, and that a coal which may produce excellent gas may not always furnish a saleable coke. At the gas-works at Birmingham, it was the practice a few years ago, and may, perhaps, be so still, to import Welsh coal for making gas, because it furnished a coke of superior quality to that produced from the coal of the immediate neighbourhood."—C. C.

Edinburgh Gas.—" In answer to your correspondent (No. 6), permit me to say, that the cause of the superiority of the Edinburgh gas over that of London arises from two causes, viz.—First, from the difference of the coal used for the manufacture of gas. In Edinburgh, cannel coal is used, which generates gas of a highly-illuminating power. In London, Newcastle coal is used, which produces a very inferior quality of gas. In the second place, from the difference of the systems in use. In Scotland, the coal is only suffered to remain in the retorts a sufficient time to give out its gases, attention only being paid to the quality of the gas manufactured. In London, the coal is allowed to remain a much longer time in the retorts, and by excessive baking a very weak gas is generated, of little illuminating power, and of little value for lighting purposes; indeed, it is well known that in London they are coke and gas manufacturers,—in Edinburgh only gas manufacturers: the one manufacturing light gas the other gas light. Five feet of cannel coal gas will give twice as much light as ten feet of the ordinary London gas; consequently, at the same rate of charge per thousand cubic feet, the one costs only half as much to produce the same quantity of light; the products of combustion, and all the disagreeable attendants upon the use of poor gas, being lessened to a very great extent."—T. A. H.

Yeast.—"In answer to correspondent (No. 3), I have to say, that the bitterness extracted from the high-dried malt and extra quantity of hops used in the brewing of London porter (giving it its peculiar flavour), becomes imparted to the yeast of the London brewers, and bread made with this yeast is bitter and unpalatable. It is said, that by throwing the yeast into a vessel of water, and letting it stand for some hours, the bitterness is removed from the sediment, which is then fit for use. For the reasons above stated, bakers generally prefer yeast arising from weak ale and table-beer, in preference to that produced by the large porter brewers."—F.

Stained Glass.—"Your Correspondent (No. 10) inquires whether any attempts have been made to do away with the necessity of joining pieces of differently coloured glass in the production of stained glass windows? If he will examine almost any modern painted window, in which figures are introduced, he will find several colours on one piece of glass. It is true, that several small pieces are frequently used in order to imitate old windows; and also, when a *perfectly clear, transparent* colour is required, it is usual to insert a piece of 'pot-metal'—that is, glass made of materials which produce the required colour when melted in the pot. All shades, from lemon-yellow to orange-red, are, however, produced by covering the glass with a mixture of oxide or sulphuret of silver and Venetian red, and then heating it in a muffle. The Venetian-red is then scraped off, and the glass is found to be stained on the surface. By varying the proportions and the temperature of the muffle, various shades are produced. The other colours consist of fusible glasses, or enamels, which are ground up and applied with a brush, and then fired in the muffle so as to fuse and fix them on the sheet of glass. These colours, although transparent, have not the same polish and clearness as the pot-metal. One of the most beautiful paintings on glass in the Great Exhibition was painted on one sheet of glass: I allude to the picture of Lucia Mondella, by P. Balgatti-Valsecchi, of Milan. It was not adapted for a painted window, but was rather to be ranked with finished oil-paintings, having the advantage over a painting on canvas in the greater brilliancy produced by the admission of the light from behind. The reason of the decline of glass-painting, and all that is said about its being a 'lost art,' is not that our manufacturers cannot produce the requisite colours, or that they are defective in the mechanical part of the art, but simply that at the present time there is no adequate inducement offered to our first-rate artists to design glass windows; whereas, formerly, the best artists were employed, and some of the celebrated windows in the Netherlands were designed by Rubens. Many of our modern windows are much too highly elaborated; and although portions of the work look well in the manufactory, the effect of the whole, when viewed at a distance, is weak and poor."—C. C.

Fluoric Acid (9).—"A method of engraving on glass, by means of a substance which possesses none of the well-known pernicious effects of hydrofluoric acid, was discovered in Germany (about the year 1844, I believe) by two chemists simultaneously, Dr. Bromeis, of Hanau, and Dr. Böttger, of Frankfort-on-the-Maine. The latter gave an account of his invention, which he called *hyalography*, and its application *hyalotypy*, to the Physical Society of Frankfort. The process was then kept secret, but was to be divulged as soon as at least fifty persons in the Zollverein district should combine to purchase it. Whether that has been done, I am not able to say: it is a question of great interest to learn. The substance used for etching, it was stated, was perfectly harmless, and acted on the glass without evolving vapours or gases (like the recent processes for metallic etchings). It was also said that it did not lose its strength by use, and that the delicacy of its action was more perfect than that on steel or copper. If more information could be elicited it would be a great boon."—A. G. F.

Fishing-nets.—"I observe that one of your correspondents (No. 5) asks whether the American loom for weaving fishing-nets, brought to Liverpool in 1850, has yet been set up. Though I am unable to answer the precise question, the following may perhaps be interesting. Looms for weaving fishing-nets are no novelty; they were invented and used in England so far back as 1776, when Mr. Freestone invented a loom for that purpose. In 1795, Mr. Boswell, of Barnstaple, Devon, introduced a machine for a similar manufacture; the nets woven were such as are used in the herring fishery, and sixty-eight meshes were worked by one motion of the machine. The efficient working of the loom was attested by the Mayor and senior Alderman of the town. The same manufacture attracted further attention in 1804, when Mr. Robertson, a stocking-weaver of Edinburgh, submitted a model loom to the Highland Society of Scotland. This loom enabled the weaver to make 300 meshes in one minute; the loom itself being about three feet wide, and costing, at the date of its introduction, about 15*l*."—G. H.

MISCELLANEA.

Diurnal Motion of the Earth.—Mr. Alfred Bird, of Birmingham, is now exhibiting, in the Philosophical Institution in that town, the Pendulum experiment which caused so much sensation in the scientific world some months back. He illustrates the theory by the usual means, a small ball being suspended over an imaginary point in an ordinary globe.

Discovery of Coal at Carrickfergus.—We have at length the gratification of learning that the spirited enterprise of the Marquis of Downshire, in working the Duncrue Mines, near Carrickfergus, has been rewarded with the discovery of its primary object, a seam of coal. After perforating the strata to an unusual depth, and in the course of a most patient exploration, meeting with an inexhaustible bed of fine rock salt, the miners have at length arrived at several layers of coal of a very superior quality, and have thus practically contradicted the conclusions of certain eminent geologists, who, at the meeting of the British Association here, in September last, seemed to consider the search for coal at Duncrue a chimerical pursuit.—*Belfast News Letter.*

Substitute for Guano.—At a Monthly Council of the Royal Agricultural Society, held at the Rooms of the Society, in Hanover-square, Lord Ashburton in the chair, a report on the subject of the Society's Prize for the discovery of a substitute for Peruvian Guano was adopted. The Society offer 1,000*l*., and the Gold Medal of the Society, as a prize for the discovery of a manure equal in its fertilizing properties to Peruvian Guano. The 1,000*l*. shall be offered in one undivided sum. No claim for the prize will be entertained, unless the claimant can satisfy the Council that an unlimited supply of the manure, at a price not exceeding five pounds per ton, will at all times be within the reach of the agriculturists of the United Kingdom.

The Steam Jet.—Mr. Goldsworthy Gurney's plan for Ventilating Mines by means of the Steam Jet is now receiving a severe testing at the hands of a Committee of the Society of Mining Engineers, established at Newcastle. Objection has been taken to this invention that with it, as well as with the ordinary furnace, there was great liability to fire the mine, especially when it was placed, as is most usually the case, at the bottom of the shaft, so as to obtain the advantage of a long column of heated air. Mechanical contrivances are found fault with as not being continuous in their action, causing pulsations in the current of air. Of this class Struve's Pneumatic Machine, or Airometer, is perhaps the best, as it is stated to possess simplicity of action and capability of instant increased energy. There is a practical limit beyond which the exhausting process cannot be conveniently carried. It is now conceded that enlarging the air-passages, and splitting the air, on the "separation system," as it is called, is by far the better way of encountering the difficulty. Much may also be effected by a judicious system of winning arrangements, taking care that the upcast shaft is always sunk on the crop, so as to afford a natural vent for the light carburetted hydrogen, so injurious to the health and dangerous to the safety of the workmen.

PATENT LAW AMENDMENT ACT, 1852.

It is understood that the Board of Trade and the Law Officers of the Crown have decided not to include the Colonies, or any of them, in any grant of Letters Patent.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

From Gazette, 17th Dec., 1852.

Dated 30th Oct, 1852.

572. H. Brinstead—Shaking straw from thrashing-machines.

Dated 9th Nov.

684. T. Dunn and W. Watts—Construction of railways.

Dated 19th Nov.

784. R. Walker—Portable houses.

Dated 27th Nov.

891. H. Winton and F. Parkes—Agricultural forks, &c.

Dated 30th Nov.

911. J. Addison—Ascertaining time by pocket sun-dial.
912. W. Jeffs—Manufacturing letters, figures, &c.
913. J. Murdoch—Materials for painting.
914. J. M. Haldon—Rendering wood imperishable and uninflammable.
915. S. Clark—Improvements in lamps.
916. A. Craig—A crane.
917. J. B. and E. Birch—Forming drains and introducing pipes.
918. J. Skutchley—Mangles and mangle-rollers.
919. J. Barlow—Stands for barrels, &c.
920. T. Parramore and S. Lewis—Wearing apparel.
921. G. Fitt—Mechanical motive-power and speed.

Dated 1st Dec.

923. C. Hart—Thrashing-machine, &c.
924. W. Slater—Ovens and baking.
925. G. A. Huddart—Boilers and furnaces.
926. C. Walker—Purifying water in steam-boilers.
927. R. Milligan—Combing machinery.
928. W. Morris—Motive-power, &c.
929. F. W. Gareen—Propelling ships.

Dated 2nd Dec.

930. J. Dable and W. Wells—Rolling metals.
931. R. Kirke—Improved grate for burning anthracite, &c.
932. W. Taylor—Propelling ships.
933. J. Rothwell—Looms.
934. W. K. Whytehead—Steam-engines and boilers.
935. J. E. M'Connell—Locomotive-engines.
936. J. Norton—Shot or projectiles.
937. E. Poulson—Mechanical purchase for working ships' pumps, &c.
928. C. Millar—Timekeepers and clock-work.

Dated 3rd Dec.

939. J. Newall—Breaks.
940. N. Seward—Hydro-pneumatic agency for motive power.
941. T. C. Banfield—Process and apparatus for extracting saccharine from beet-root, &c.
942. P. and A. B. Walker—Fermenting ale and porter.
943. H. Hitchens and W. Batley—Production of raised surfaces, &c.
944. P. D. Woodcock—Wind pile.
945. C. De Bergue—Looms for weaving.
946. G. Ware and A. H. Fernandez—Wedges or keys for holding rails in chairs.
947. J. Neale—Back-fastenings for Venetian blinds, &c.
948. G. Stiff—Printing-machine.
949. J. Bethell—Machinery for digging, &c.
950. J. Bethell—Steam-engines.
951. A. Wall—Sheet-metal for shipbuilding.
952. D. M'Nee—Machine for printing on cloth and on paper with colours.
953. R. A. Brooman—Manufacture of sugar.
954. S. Neville—Lamp-glasses and globes.
955. W. Keates—Fire-boxes for locomotives, &c.

Dated 4th Dec.

956. J. T. Manifold and C. S. Lowndes—Method of extracting sugar from the cane.
957. J. Rowbotham—Timekeepers and check on watchmen.
958. A. Lawrie—Manufacture of oars, &c.
959. J. Murdoch—Galvanic battery.
960. J. Bentley—Fire-arms.
961. J. Cliff—Making and compressing bricks, &c.
962. W. Maugham—Rendering wood fireproof.
963. G. F. Parratt—Portable bridges or pontoons.
964. I. L. Pulvermacker—Pipes and cigar-holders.

Dated 6th Dec.

965. D. J. Murphy—Archimedean agricultural machine.
966. J. Buchanan—Treatment of flax, &c., and machinery.
967. R. A. Brooman—Saws and saw-mills.
968. G. F. De Doutret—Manufacture of alcoholic saccharine and starch products.
969. A. J. A. Gautier—Treatment of peat.
970. A. Lees and T. Kay—Machinery for spinning, &c.
971. T. M. Gooch—Railway signals and apparatus.
972. C. A. Jordery—Cravat collars and stocks.
973. R. Laming—Purifying gas and obtaining products.
974. E. Tucker—Manufacture of starch.
975. W. Paton—Driving bands.
976. J. Norman—Making and setting square sails.
977. W. Blackett—Steam-boilers.
978. J. Smith—Paving roads, &c.
980. T. Conolly and W. Cotter—Propelling vessels.

Dated 7th Dec.

981. P. Duchamp—Improved Jacquard loom.
982. P. A. Le Comte de Fontaine Moreau—Bars of furnaces.
983. J. H. Johnson—Weaving carpets.
984. T. Challinor—Apparatus to be applied to decanters and other vessels for running of liquids.
985. W. Mayo—Ball or float-valves and cocks.
986. J. Norton—Transmitting motive power.
987. A. V. Newton—Conveyance of letters, &c., and passengers.
988. S. A. Goddard—Construction of pistols.
989. B. H. Brooman—Safety-valves.
990. R. A. Brooman—Heating, evaporating, torrefying, distilling, and refrigerating.

Dated 8th Dec.

991. T. L. Preston—Machine for making links for chains.
995. J., R., and A. S. Harrison—Manufacture of textile and other fabrics.
997. W. Baddeley—Conversion of rectilinear into circular motion.
999. T. Hill—Paddle-wheels for propelling.
1001. A. N. Groves and C. W. Finzell—Condensing steam.
1003. Sir J. P. Orde—Head-gear for horses, &c.

APPLICATIONS WITH COMPLETE SPECIFICATION FILED.

994. H. Jenkins—Manufacture of bracelets, brooches, &c.—8th Dec.
1005. E. Kopp and F. A. Gatty—Printing or dyeing textile fabrics.—9th Dec.
1006. D. L. Price—Alarums and signals by electricity.—9th Dec.
1038. G. A. Everitt—Rolling metal strips for manufacture of wire.—13th Dec.
1051. J. Webb—Ornamenting enamel watch-dials.—14th Dec.

From Gazette, 21st Dec.

NONE.

WEEKLY LIST OF PATENTS SEALED.

Dated 18th Dec., 1852.

95. William Oxley, Manchester—Improvements in apparatus for heating and drying.
404. William Stevenson, Preston—Improvements in weft forks for power-looms.
463. William Harrison, Blackburn, Lancashire—Improvements in machinery or apparatus for sizing, and otherwise preparing cotton, wool, flax, and other warps for weaving.
502. Charles William Graham, Bishopsgate-street Within—Improvements in the manufacture of bottles and jars.
603. David Thomson, Dundee—Improvements in the manufacture of carpets.

Dated 22nd Dec.

103. Charles Langley, Poplar, Middlesex—Improvements in ship-building.
108. Thomas Fearn, Birmingham—Improvements in ornamenting metallic surfaces, and in machinery.
112. Herman Twick, Broad-street-buildings—Improvements in packing goods.
115. Charles John Carr, Belper, Derbyshire—Improvements in machinery for making bricks and other similar articles.
128. William Rogers, 125, Long-acre—Improvements in studs, buttons, and other fasteners.
309. James Yule, St. Luke's-terrace, Gloucester—Improved arrangement of sawing machinery.
360. George Lloyd, Budbrooke, Warwickshire—Improvements in the manufacture of paper.
395. John Geage, 4, Wellington-street South, Strand—Improved stove, or heating apparatus.

N.B.—The following were sealed under the old law:

Robert Burn, Edinburgh—A certain improvement in steam-engines, 21st Dec., six months.

Robert Galloway, Cartmel, Lancashire—Improvements in manufacturing and refining of sugar, 21st Dec., six months.

WEEKLY LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

Date of Registration.	No. in the Register.	Title.	Proprietor's Name.	Address.
Dec. 21	3401	Universal Portable Tent and Sleeping-cabin.	Hen. Harrison, sen.	King's-road, Hoxton.
,, ,,	3402	Improved Æquimotion Spring.	W. and F. Thorn	10, John-street, Oxford-street, coachbuilder.